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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/950,040	09/10/2001	Laurence D'Agati		8656

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Thomas A. O'Rourke
Wyatt, Gerber & O'Rourke
99 Park Avenue
New York, NY 10016

EXAMINER

WIN, AUNG T

ART UNIT PAPER NUMBER

2645

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/950,040	Applicant(s) D'AGATI ET AL.	
	Examiner Aung T Win	Art Unit 2645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-49 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 1, 20, 29, 34, and 49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "one or more mobile stations **and/or** with one or more mobile station portions" and "one or more other base stations **and or** one or more other base station portions" render the claims indefinite. It is unclear whether the term "one or more mobile stations **and/or** with one or more mobile station portions" specifies "one or more mobile stations **and** with one or more mobile station portions" or ""one or more mobile stations **or** with one or more mobile station portions", and the term "one or more other base stations **and or** one or more other base station portions" specifies "one or more other base stations **and** one or more other base station portions" or ""one or more other base stations **or** one or more other base station portions".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section ~~made in this Office action~~:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-15, 19-27, 29, 32, 34, 40, 42-49 are rejected under 35 U.S.C. 102(e) as being anticipated by Leslie et al. Patent No.: US006404775B1.

Regarding Claims 1, 20, and 29, Leslie discloses the wireless protocol-converting repeater 210 (a wireless communication apparatus) for communicating with one or more 800MHz cellular base stations and one or more 1.9 GHz GSM subscriber mobile stations [Figure 2, Figure 6-11]. Leslie further discloses the base terminal emulation means 214 (base station portion) being adapted to communicate with one or more 1.9 GHz GSM subscriber mobile stations [Column 16, Line 59-67] [Column 24 & 25]. Leslie also discloses the Subscriber terminal emulation means 212 (mobile station portion) being adapted to communicate with one or more 800MHz cellular base stations [Column 16, Line 42-58] [Column 20, Line 57-67] [Column 21-23].

Regarding the limitation "and/or" and "and or" (e.g. Claim 1, Line 5 & Line 7), examiner interpret them as "or". Since in patent practice, the term "or" only requires the examiner to find one of the two alternation features (e.g. Claim 1 in Line 3-4 recites two features "communicate with one or more mobile stations or with one or more mobile station portions", it is clear that the repeater of Leslie can communicate with mobile stations and base stations.

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Regarding Claims 2 and 21, Leslie further discloses that control of mobile station functionality is provided by donor air protocol processor 544 [Column 22, Line 22-67] [Column 23, Line 1-25] and base station functionality is provided by subscriber air protocol processor 644 [Column 24, Line 8-29] [Figure 2].

Regarding Claims 34 and 49, which are method claims corresponding to Claim 1 is rejected for the same reasons as stated above because the claimed steps read on the corresponding means on Claim 1.

Regarding Claims 3 and 22, Leslie further discloses that the Subscriber terminal emulation means 212 comprises downlink receiver (means 230 for receiving and demodulating signals from the donor 800 MHz cellular base station) and uplink transmitter (means 232 for modulating and transmitting signals to donor 800 MHz cellular base station) [Column 17, Line 40-57].

Regarding Claims 4 and 23, Leslie discloses the donor air protocol processor 544 [See Claim 2 rejection] to control means 230 and means 232 (baseband processing) [Figure 2].

Regarding Claims 5 and 24, Leslie further discloses that base terminal emulation means 214 comprises downlink transmitter (means 236 for modulating and transmitting signals

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to 1.9 GHz GSM subscriber mobile station) and uplink receiver (means 234 for demodulating and receiving signals from 1.9 GHz GSM subscriber mobile station) [Column 24, Line 8-29] [Figure 2].

Regarding Claims 6 and 25, Leslie discloses the subscriber air protocol processor 644 [See Claim 2 rejection] to control means 234 and means 236 (baseband processing) [Figure 2].

Regarding Claim 7, Leslie clearly discloses that the air interface between base station and mobile station portion is 800MHz cellular system air interface and the air interface between mobile station and base station portion is 1.9 GHz PCS system interface [Figure 2].

Regarding Claim 8, mobile station portion and the base station portion inherently have multiple channels because the wireless protocol-converting repeater 210 is TDMA based system.

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Regarding Claim 9, Leslie also discloses that there are more available channels allocated in the 1.9 GHz PCS band (more PCS receive channels) than 800 MHz cellular band (cellular transmit channel) [Column 9, Line 14-39].

Regarding Claims 10, 11, 12, and 13, Leslie discloses that Subscriber terminal emulation means 212 with 800 MHz TDMA air protocol (virtual mobile station) and base terminal emulation means 214 with 1.9 GHz GSM air protocol (virtual base station) [See Claim 1 rejection].

Regarding Claims 14 and 26, Leslie also discloses that the wireless protocol-converting repeater 210 is adapted for bidirectional communications with terminals of first communication system (800MHz subscriber mobile stations) with terminals of second communication system (1.9 GHz PCS subscriber mobile stations) i.e., adapted to provide connectivity among all mobile stations in both cellular and PCS network [Column 15, Line 35-51]. Therefore, it is inherent that the wireless protocol-converting repeater 210 is capable to determining whether protocol and frequency conversions are required (multiple instances) to provide bidirectional communications.

Regarding Claim 15, the wireless protocol-converting repeater 210 inherently comprises a command and control channel in order to carry control information between communication devices.

Regarding Claim 27, Leslie discloses the 800 MHz cellular system and 1.9 GHz PCS system [Figure 2] inherently comprises operations and maintenance center which monitors and manages the network performance from the data collected from the network providing the information about current state, operation and utilization (frequency plans) of the network.

Regarding Claims 19 and 40, Leslie further discloses that mobile station portion and the base station portion is communicated and controlled by link manager processor 550 [Column 25, 26, 27 & 28] [Figure 2 & 6].

Regarding Claim 32, Leslie discloses the structure of wireless protocol-converting repeater 210 [Figure 2] and baseband processing parts [Figure 6] wherein uplink receive path is coupled with uplink transmit path and a downlink receive path with a downlink transmit path by Link Manager Processor 550.

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Regarding Claim 42, Leslie discloses the base terminal emulation means 214 (base station portion) [See Claim 1 rejection] inherently control activity of mobile stations.

Regarding Claims 43, 44, 45, 46, 47, 48, Leslie clearly discloses that the air interface between base station and mobile station portion is 800MHz cellular system air interface and the air interface between mobile station and base station portion is 1.9 GHz PCS system interface [Figure 2]. Therefore, the modulation processes, the data rates, operating frequencies, Amplitude of the signals, protocols of the base station portion and the mobile station portion are decoupled.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 16, 17, 18, 28, 31, 33, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leslie et al. Patent No.: US006404775B1 in view of Haartsen Patent No.: US005884145A.

Regarding Claims 16, 17, 18, 28, 31, 33, and 41, Leslie discloses Subscriber terminal emulation means 212 (mobile station portion) of the wireless protocol-converting

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repeater 210 functioned as mobile station [See Claim 1 rejection]. Leslie fails to teach that mobile station portion monitor the best available frequency channels for the channel allocation.

Haartsen discloses the method and system for autonomously allocating communications channel for communication between the mobile station and base station. Haartsen teaches that mobile station does the interference measurements and report the best available frequency channels for channel allocation periodically [Column 8, Line 19-40]. Moreover mobile assisted channel allocation method based on interference measurement results from nearby base stations is well known in the wireless communication art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the function of mobile station portion of the wireless protocol-converting repeater 210 with the channel allocation method as taught by Haartsen for efficient use of available channel resources.

4. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leslie et al. Patent No.: US006404775B1 in view of Olds et al. Patent No.: US005867789A.

Regarding Claim 30, Leslie discloses base station portion [See Claim 1 rejection] but fails to disclose that base station portion dynamically determines efficient routing paths based on prioritization, network loading and node availability.

Olds discloses the channel management process in a wireless communication system performed by parent base station [Abstract]. Olds teaches that base station process the efficient handoff requests based on prioritization, network loading conflict and channel availability. [Figure 5-8]. Moreover, channel allocation and management method performed by base station based on prioritization of mobile stations and network load among base stations is well known in the wireless art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the Leslie's the wireless protocol-converting repeater 210 with channel management process as taught by Olds for efficient channel allocation.

5. Claims 35-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leslie et al. Patent No.: US006404775B1 in view of Mizota Patent No.: 4,713,809.

Regarding Claims 35-39, Leslie further discloses the protocol-converting repeater 210 adapted for use in applications in which the first and second communication systems employ incompatible air protocols [See Summary]. Leslie further discloses the base terminal emulation means 214 (base station portion) and the Subscriber terminal emulation means 212 (mobile station portion) [See Claim 1 rejection]. Leslie further discloses base terminal emulation means and the subscriber terminal emulation means

includes transmitters and receivers [See Claim 3 and 5 rejections]. Leslie fails to teach that protocol-converting repeater 210 adapted for use with another protocol-converting repeater 210.

Mizota discloses the method of saving power in time division multiple access radio communications system constituted by a plurality of repeater stations adapted to communicate each other. [See Summary] [Figure 1] [Figure 5].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the Leslie's repeater to communicate with another protocol-converting repeater 210 as taught by Mizota to reduce the power consumption.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Carney	Patent No. :	US005697059
Collyer	Patent No. :	US005915208A
Cuffaro et al.	Patent No. :	US006418317B1
Grube et al.	Patent No. :	US005387905A
Kaewell, Jr. et al.	Patent No. :	US006711223B2
Peltola et al.	Patent No. :	US006782263B1
Ito et al.	Patent No. :	US006690915B1
Sporre	Patent No. :	US005966657A

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Sood Patent No. : US005721762A


Wichman Patent No. : US005930240A

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aung T Win whose telephone number is (571) 272-7549. The examiner can normally be reached on 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (571) 272-7547.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aung T. Win
Group Art Unit 2645
April 14, 2005


FAN TSANG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600